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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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TEXAS INSTRUMENTS INCORPORATED			RYMAN, DANIEL J	
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2665

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/591,888

Applicant(s)

DABAK, ANAND G.

Examiner

Daniel J. Ryman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-20,22-34,47-50 and 52-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-19,23,24 and 30-34 is/are allowed.
- 6) ☒ Claim(s) 1,5-9,20,22,25-29,47-50 and 52-56 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 5-9, 20, 22, 25-29, 47-50, and 52-56 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5-7, 20, 22, 25-29, 47-50, and 52-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jalali et al. (USPN 5,828,662) in view of Dent et al. (USPN 5,353,352).

4. Regarding claims 1, 20, 25, 27, and 28, Jalali discloses a wireless communications unit, comprising: an antenna for transmitting and receiving signals (col. 4, line 60-col. 5, line 10) where it is implicit that the mobile unit has an antenna since it transmits and receives signals; a radio subsystem coupled to the antenna for amplifying and processing of signals transmitted and received at the antenna (col. 5, lines 16-34) where the ability to vary the power level of the transmitted message implicitly discloses amplification; circuitry, coupled to the radio subsystem, for converting received signals into digital form, and for converting digital signals into a form transmittable over the antenna (col. 5, lines 46-52) where it is implicit by the use of the layers of the OSI model (layer two ARQ) that the signal is digital when it is manipulated by the mobile unit such that a mechanism is required to take the digital signal and turn it into a form transmittable over the antenna; a programmable digital circuit, for performing digital operations

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upon signals to be transmitted and received, the programmable digital circuit programmed to request a connection with a base station by performing operations comprising: receiving, from the base station, a signal (assignment message) indicating at least one time slot within which a preamble may be transmitted by the wireless communications unit (col. 4, line 60-col. 5, line 10 and col. 5, lines 57-60); selecting one of a plurality of orthogonal codes (SSRC-PN) for the preamble (col. 6, lines 29-36) where a mobile unit selects the orthogonal code assigned to the SSR channel time slot; generating a spread code using the selected orthogonal code repeated a selected number of repetitions (k repetitions) (col. 6, lines 40-53); multiplying (masking) the spread code (repeated SSRC-PN) by a scrambling code (long code) associated with the base station (long code that “differentiates different sectors”) (col. 6, lines 40-53); and transmitting, to the base station, a preamble signal corresponding to the multiplied spread code (col. 5, lines 57-60).

Jalali does not expressly disclose that the spread code has a length equal to a length of the scrambling code. Dent teaches, in a CDMA communication system, that “scrambling masks to be constructed have the same length as the orthogonal codewords to which they [are applied]” (col. 10, lines 1-7). In addition, it is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Jalali teaches masking a repeated orthogonal sequence

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with a long code and Dent teaches using a scrambling mask that has the same length as the scrambled sequence, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the spread code be a length equal to a length of the scrambling code.

5. Regarding claims 5-7, 22, 26, and 29, Jalali in view of Dent discloses that the orthogonal codes consist of a set of Walsh Hadamard codes (Dent: col. 10, lines 1-7).

Jalali in view of Dent does not expressly disclose that the orthogonal codes consist of a set of Walsh Hadamard codes having a length of sixteen; wherein the generating step repeats a symbol of the Walsh Hadamard code 256 times or 240 times; and wherein the length of the scrambling code is 4096 chips or 3840 chips, respectively. Jalali in view of Dent implicitly discloses that the preamble has a certain length (Jalali: col. 6, lines 29-53); that the scrambling code (long code or scrambling code) has a certain length (Jalali: col. 6, lines 29-53 and Dent: col. 10, lines 1-7); and that the transmitted signal has the same length as the scrambling code (long code or scrambling code) (Dent: col. 10, lines 1-7). It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Jalali in view of Dent disclose that the preamble codes have a certain length, that the scrambling code has a certain length, and that the transmitted signal and the scrambling code have equal length, it

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would have been obvious to one of ordinary skill in the art at the time of the invention to use any length for the Hadamard codes, including sixteen, to use any length for the scrambling code, including 4096 and 3840, and to repeat the Hadamard code a number of times such that the Hadamard code and the spreading code are equal (here, 256 times or 240 times).

6. Regarding claims 47 and 48, Jalali teaches a method of using a preamble from a remote transmitter, comprising the step of: receiving a first number of repeated groups of signals (SSRC-PN) having a second number of signals in each group (bits in a group) from a received signal having a predetermined length (length of a time slot) (col. 6, lines 37-53), where the second number of signals comprise a code corresponding to the remote transmitter (col. 6, lines 29-36); and acknowledging the preamble to the remote transmitter to establish communications (col. 5, lines 35-39).

Jalali does not expressly disclose having the received signal comprise a scrambling code having the predetermined length. Dent teaches, in a CDMA communication system, that “scrambling masks to be constructed have the same length as the orthogonal codewords to which they [are applied]” (col. 10, lines 1-7). In addition, it is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Jalali teaches masking a repeated orthogonal sequence with a long code and Dent teaches using a scrambling mask that has the

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same length as the scrambled sequence, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the received signal comprise a scrambling code having the predetermined length.

In addition, although Jalali discloses that the base station receives the preamble and acts upon it (col. 5, lines 35-39), Jalali does not expressly disclose correlating the first number of repeated groups of signals with a code having the second number of signals. Dent teaches, in a CDMA communication system, that in a typical CDMA system each coded signal is received by “correlating the composite signal [composed of all the signals transmitted in the system] with one of the unique spreading codes” in order to “isolate[] and decode[]” the signal from a given station (col. 2, lines 10-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to correlate the first number of repeated groups of signals with a code having the second number of signals in order to isolate and decode the signal from a given station.

7. Regarding claims 49 and 50, incorporating the rejection of claims 5-7, 22, 26, and 29, Jalali in view of Dent discloses that the code is a Walsh Hadamard code and suggests that the first number is 256, the second number is 16, and the predetermined length is 4096, as outlined above.

8. Regarding claim 52, Jalali in view of Dent discloses that the received signal is a preamble having the predetermined length transmitted from a wireless transmitter to a wireless receiver in a cell (Jalali: col. 37-53), and wherein one of the plurality of codes corresponds to the wireless transmitter (Jalali: col. 6, lines 29-36) where the SSRC-PN code corresponds to a time slot, which in turn corresponds to a mobile unit (Jalali: col. 5, lines 4-10), and wherein the scrambling

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code (long code) corresponds to the cell ("differentiates different sectors") (Jalali: col. 6, lines 45-53).

9. Regarding claim 53, Jalali in view of Dent discloses that the code is a Walsh Hadamard code (Dent: col. 10, lines 1-7). Jalali in view of Dent does not expressly disclose that the scrambling code is part of a Gold code; however, Examiner takes official notice that it was well known in the art at the time of the invention to use Gold codes as scrambling codes. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a Gold code as a scrambling code.

10. Regarding claim 54, Jalali in view of Dent discloses that each group of the first number of groups is substantially identical (k repetitions) (Jalali: col. 6, lines 40-53).

11. Regarding claim 55, Jalali in view of Dent discloses despreading the first number of groups of signals, thereby producing a plurality of despread signals (Jalali: col. 8, lines 28-37).

12. Regarding claim 56, Jalali in view of Dent suggests correlating the despread signals with the code having the second number of signals repeated the first number of times (Dent: col. 2, lines 10-26).

13. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jalali et al. (USPN 5,828,662) in view of Dent et al. (USPN 5,353,352) as applied to claims 1 and 20 above, and further in view of Applicant's Admitted Prior Art.

14. Regarding claims 8 and 9, Jalali in view of Dent does not expressly disclose that the receiving step comprises receiving a signal indicating a plurality of time slots within which the preamble may be transmitted by the wireless communications unit or that the selecting step comprises executing a pseudo-random selection algorithm. Rather, Jalali in view of Dent

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discloses that the mobile unit receives an assignment of a time slot (Jalali: col. 5, lines 4-10) where the mobile unit selects the orthogonal sequence assigned to the time slot (Jalali: col. 6, lines 29-36). Applicant admits as prior art having a base station broadcast to the mobile units a signal indicating which timeslots are available and having the mobile units pseudo-randomly select a code in order to minimize the likelihood of collisions (Applicant: page 3, lines 3-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the receiving step comprise receiving a signal indicating a plurality of time slots within which the preamble may be transmitted by the wireless communications unit since this is a well known method for assigning time slots in wireless systems. In addition, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the selecting step comprise executing a pseudo-random selection algorithm in order to minimize collisions between mobile units contending for the same time slot.

Allowable Subject Matter

15. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose or fairly suggest having the base station de-interleave the bits to group corresponding bits from each of the repetitions of the symbol in order to despread the grouped bits to recover a symbol and then correlate the symbols to identify a code. Rather the prior art suggests despreading and then correlating the signal without de-interleaving.

16. Claims 11-19, 23, 24, and 30-34 are allowed. The prior art does not disclose or fairly suggest having the base station de-interleave the bits to group corresponding bits from each of

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the repetitions of the symbol in order to despread the grouped bits to recover a symbol and then correlate the symbols to identify a code. Rather the prior art suggests despread and then correlating the signal without de-interleaving.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman

Examiner

DR

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HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600